



# PSITTACOSIS

1. **Agent:** *Chlamydophila psittaci* (previously *Chlamydia psittaci*) is an obligate intracellular bacterial pathogen.
2. **Identification:**
  - a. **Symptoms:** Infections range from asymptomatic to systemic illness with severe pneumonia. Cases usually have an acute onset of fever, chills, headache, malaise, and myalgias, with or without respiratory symptoms. A non-productive cough usually develops and pneumonia is not uncommon, with chest x-ray findings of a lobar, patchy, or interstitial infiltrates. As many as 80% of recognized persons with psittacosis may be hospitalized. Pericarditis, myocarditis, endocarditis, superficial thrombophlebitis, hepatitis, and encephalopathy are rare complications.
  - b. **Differential Diagnosis:** Psittacosis-related pneumonia should be differentiated from other unusual causes of community-acquired pneumonia including *Coxiella burnetii*, *Mycoplasma pneumoniae*, *Chlamydia pneumoniae*, *Legionella* species, and respiratory viruses such as influenza.
  - c. **Diagnosis:** Most diagnoses are established by serologic methods in which paired sera are tested for chlamydial antibodies by complement fixation (CF). Acute-phase serum specimens should be obtained as soon as possible after onset of symptoms, and convalescent-phase serum specimens should be obtained at least 2 weeks after the first specimen. Micro-immunofluorescence (MIF) and polymerase chain reaction (PCR) assays can be used to distinguish *C. psittaci* infection from infection with other chlamydial species. The infectious agent also can be isolated from the patient's sputum, pleural fluid, or clotted blood during acute illness and before treatment with antimicrobial agents; however, culture of *C. psittaci* is performed by few laboratories because of technical difficulty and safety concerns.
3. **Incubation:** Usually 5-14 days, but longer periods have been reported.
4. **Reservoir:** Wild and domestic birds, especially psittacine birds (parrots and cockatoos), budgerigars (parakeets), pigeons, and some poultry (primarily turkey and ducks; not much in chickens).
5. **Transmission:** Infection occurs by inhalation of the organism, typically in dust from dried bird droppings. Over 70% of cases reported to CDC over a 10-year period were the result of exposure to pet, caged birds. Movement of birds in their cage can generate dust, but cage cleaning is probably a bigger problem. Workers may be exposed to contaminated dust during the clean-up/removal of pigeon droppings. Pet bird owners have also become infected when bitten by large psittacine birds. Veterinarians or bird pathologists have been infected by handling carcasses or performing necropsies on infected birds. Occupational exposure may take place in poultry processing or rendering plants where aerosols are generated by handling/processing of poultry viscera.
6. **Communicability:** Person-to-person spread has been suggested but not proven. The extent of such transmission is negligible if not nil.
7. **Specific Treatment:** Tetracyclines are the drugs of choice. Most patients respond to oral therapy (100mg of doxycycline administered twice a day or 500 mg of tetracycline hydrochloride administered four times a day). For initial treatment of severely ill patients, doxycycline hyclate can be divided into two infusions per day (up to 100mg per dose). Remission of symptoms usually is evident within 48—72 hours. However, relapse can occur, and treatment must continue for at least 10—14 days after fever abates. Erythromycin probably is the best alternative agent in patients for whom tetracycline is contraindicated (e.g., children aged <9 years and pregnant women).
8. **Immunity:** There are many strains of *C. psittaci* that can cause human disease, and cross-immunity is limited or non-existent.



Even immunity to homologous strains is at best transient. New infections and clinical disease can develop within months or treatment and recovery, should the individual be re-exposed.

## REPORTING PROCEDURES

1. Report any cases or suspected cases within 7 calendar days (Title 17, Section 2500, *California Code of Regulations*).

### 2. Report Forms:

[PSITTACOSIS CASE REPORT \(CDPH 8583\)](#)

### 3. Epidemiologic Data:

- a. Place of residence (be specific with regard to address, city and state).
- b. History of bird contact/ownership, occupations that would bring the case into contact with wild or domestic fowl or their droppings, or avocational pursuits that would result in these exposures.
- c. Additional cases among other persons who may have had similar exposures (e.g., family, co-workers).
- d. If the source of infection is a pet bird, obtain the history of ownership, date and place of acquisition, and the bird's health history. Provide the information to Veterinary Public Health. Veterinary Public Health staff will determine if testing of birds or environment, quarantine and treatment of the bird(s), or investigation of the source of a recently purchased bird, are warranted.

## CONTROL OF CASE, CONTACTS & CARRIERS

Investigate within 7 days. Investigated by ACDC.

### CASE:

**Precautions:** Standard precautions are recommended.

**CONTACTS:** No specific measures other than case finding and education. No vaccine is presently available.

## PREVENTION-EDUCATION

1. All birds suspected to be the source of human infection should be seen by a veterinarian for evaluation and management. Birds with *C. psittaci* infection should be isolated and treated with appropriate antimicrobial agents for at least 45 days. Birds suspected of having infection that have died or have been euthanized should be sealed in an impermeable container and transported on dry ice to a veterinary laboratory for testing. All potentially contaminated caging and housing areas should be disinfected thoroughly and aired before reuse, because these areas may contain infectious organisms. *C. psittaci* is susceptible to most household disinfectants and detergents, including 70% alcohol, 1% Lysol, and 1:100 dilution of household bleach. People cleaning cages and other bird housing areas should avoid scattering the contents. People exposed to common sources of infection should be observed for development of fever or respiratory tract symptoms; early diagnostic tests should be performed and therapy should be initiated if symptoms appear.
2. If prevention and education information related to animal care or testing is requested or required, this information should be provided by Veterinary Public Health staff.

## DIAGNOSTIC PROCEDURES

### Laboratory confirmation

1. Isolation of *Chlamydophila psittaci* from respiratory specimens (e.g., sputum, pleural fluid, or tissue), or blood, or
2. Fourfold or greater increase in antibody (Immunoglobulin G [IgG]) against *C. psittaci* by complement fixation (CF) or microimmunofluorescence (MIF) between paired acute- and convalescent-phase serum specimens obtained at least 2-4 weeks apart, or
3. Supportive serology (e.g. *C. psittaci* antibody titer [Immunoglobulin M (IgM)] of greater than or equal to 32 in at least one serum specimen obtained after onset of symptoms), or
4. Detection of *C. psittaci* DNA in a respiratory specimen (e.g. sputum, pleural fluid or



tissue) via amplification of a specific target by polymerase chain reaction (PCR) assay.

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### Serologic diagnosis

**Collection:** serum separator tube.

#### Test Requisition and Report Form H-3021

**Procedure:** Collect first (acute) blood as early as possible, preferably within 7 days after onset of rash. Collect second (convalescent) blood at least 2 weeks later. Label all specimens with name of patient.

**Storage:** Refrigerate if necessary. Send each specimen to the Public Health Laboratory as soon as possible.

**Amount:** 8-10 ml.

**Bacterial Identification:** Sputum, pleural fluid, or clotted blood samples collected during acute illness and before treatment with antimicrobial agents must be transported immediately under refrigeration to the Public Health Laboratory for shipment to the State.

**Collection:** Red top tube.

### CASE CLASSIFICATION

Probable: An illness characterized by fever, chills, headache, cough and myalgia that has either:

1. Supportive serology (e.g. *C. psittaci* antibody titer [Immunoglobulin M, IgM] of greater than or equal to 32 in at least one serum specimen obtained after onset of symptoms), or
2. Detection of *C. psittaci* DNA in a respiratory specimen (e.g. sputum, pleural fluid or tissue) via amplification of a specific target by polymerase chain reaction (PCR) assay.

Confirmed: An illness characterized by fever, chills, headache, cough and myalgia, and laboratory confirmed by either:

1. Isolation of *Chlamydophila psittaci* from respiratory specimens (e.g., sputum, pleural fluid, or tissue), or blood, or
2. Fourfold or greater increase in antibody (Immunoglobulin G [IgG]) against *C. psittaci* by complement fixation (CF) or microimmunofluorescence (MIF) between